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ABSTRACT

The paper presents an organizational framework to guide the design and implementation of integrated services for preschool children with severe behavior disorders, particularly those programs where cooperative agreements are formed between separate service agencies. A project that mainstreams preschool children with severe behavior disorders into a local day care center is described to illustrate planning decisions made at the interdependent levels of (1) policy, (2) setting, (3) service provider, and (4) child. Suggestions are made and supported by the literature for considering the policy issues of legal mandates, attitudes toward integration, types of integrated experiences, the setting components of philosophies, organizational structures and needs, service provider decisions on program implementation, staff development, parent participation, and child concerns of selection and placement, instructional targets, intervention strategies, and progress evaluation. Sixteen pages of references are provided. (DB)

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# Forming Cooperative Programs for Mainstreaming Preschool Children with Severe Behavior Disorders: Policy, Programmatic, and Procedural Issues

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Running head: A COOPERATIVE PROGRAM FOR MAINSTREAMING

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Abstract

This paper presents an organizational framework to guide the design and implementation of integrated services at the preschool level, particularly those programs where cooperative agreements are formed between separate service agencies. A project that mainstreams preschool children with severe behavior disorders into a local day care center is described to illustrate planning decisions made at the interdependent levels of (a) policy, (b) setting, (c) service provider, and (d) child. Suggestions are made and supported by the literature for considering the policy issues of legal mandates, attitudes towards integration, and types of integrated experiences, the setting components of philosophies, organizational structures, and needs; service provider decisions on program implementation, staff development, and parent participation; and child concerns of selection and placement, instructional targets, intervention strategies, and progress evaluation.

# Forming Cooperative Programs for Mainstreaming Preschool Children with Severe Behavior Disorders: Policy, Programmatic, and Procedural Issues

The past 10 years have produced a wealth of research on serving individuals with handicaps in integrated environments. Considerable attention has been given to (a) attitudes of the participants, (b) appropriate instructional targets for the children with handicaps, (c) intervention strategies effective in achieving those targets, and (d) involvement of staff and parents in the integration process. Researchers have also focused attention on the extent to which educating children with handicaps in integrated environments is an effective and efficient way to meet the needs of these individuals and of their nonhandicapped peers (e.g., Bartlett, 1977; Blacher-Dixon, Leonard, & Turnbull, 1981; Peck and Cooke, 1983; Sabornie, 1985; and Zigler & Muenchow, 1979).

There is a general consensus that integrating children with and without handicaps is beneficial if integration is well planned and structured. Field, Roseman, DeStefano, and Koewler (1981) and Strain (1983a) found that social interactions of children with handicaps occurred more frequently with nonhandicapped peers than with other handicapped children. McHale and Simeonsson (1980) and Sasso, Simpson, and Novak (1985) demonstrated from interviewing and administering attitude scales that

nonhandicapped children's attitudes toward children with handicaps were positively influenced through social contact. Other benefits which have been suggested include (a) the handicapped child's increase in learning rate as a result of modeling nonhandicapped peers (Brinker & Thorpe, 1984; Wang & Birch, 1984), (b) better generalization and maintenance of behaviors because natural stimuli and reinforcers occur in more normal environments (Stokes & Baer, 1977), and (c) more cost-efficient delivery of services in short and long term analyses (Brown, Branston, Hamre-Nietupski, Johnson, Wilcox, & Gruenewald, 1979; Hamre-Nietupski, Nietupski, Bates, & Maurer, 1982; and Stetson, 1984).

While research provides a good rationale for educating children with handicaps in integrated environments and suggests many effective techniques for achieving its potential benefits, service providers have limited information about how to make the numerous decisions involved in setting up a mainstream program. The purpose of this paper is to present an organizational framework that can guide the design and implementation of integrated services at the preschool level, particularly when cooperative arrangements are formed between service agencies. The process of establishing a project that mainstreams preschool children with severe behavioral disorders into a local day care center is described that illustrates planning decisions made at the four distinct yet interdependent levels of (a)

policy, (b) setting, (c) service provider, and (d) child (illustrated in Figure 1).

Level 1, Policy, considers such issues as legal mandates, types and goals of integrated experiences, and attitudes towards integration. Level 2, the Setting, involves decisions that are made about location of services based on organizations' philosophies, structures, and needs. Level 3, Service Provider, considers how an agency will implement and evaluate services. Level 4, the Child includes the decisions a service provider makes about a particular child's selection and placement, instructional targets, intervention strategies, and progress analysis. The following information is not an exhaustive review of the issues affecting service delivery but is an effort to identify the most salient, critical elements of integration at the preschool level.

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Insert Figure 1 about here

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## Policy

In designing the preschool project described in this paper, the authors first considered what the state's and local community's policies were towards integration and how they were interpreted in resources. Given these resources, it was then necessary to review the literature to guide in making decisions about the type of integrated experiences to

provide and how this might be affected by the attitudes and expectations of the participants.

Legal Mandates

The Education of All Handicapped Children Act, PL 94-142, requires that children be educated in the least restrictive environment possible. States have interpreted this mandate in numerous ways, often influenced by or affecting other state policies. Brinker and Thorpe (1985) reviewed the degree to which 9 states were integrating handicapped students and how this related to their policies and regulations. They found those states that had integrated more children with handicaps also had fewer handicapping categories, cross discipline coursework requirements for both regular and special education teachers, college programs for preparing teachers to work with severely handicapped students, and more federally funded projects.

The state in which this project is implemented has similar characteristics to those states found by Brinker and Thorpe to be integrating more students. These policies set a climate for many officials, administrators, and teachers to become more positive towards mainstreaming. Small state grants were available, assisting this project to be designed in a manner that would most likely result in successful outcomes. However, because grants or other outside monies are not always accessible, service providers need to find a variety of program options for keeping costs low and be more

creative in sharing resources across existing community programs to support integration.

Type of Integration Opportunities

A service provider has to determine the kind of integration experiences to give based on what Guralnick (1981) identified to be the participating children's (handicapped and nonhandicapped) ages, developmental levels, behavior patterns, and educational needs; and on the integrated environment's ability to match or adapt to these needs. There is a continuum of integration opportunities which can be defined in different ways. In reviewing the literature, Odom & Speltz (1983) labeled two variables to describe integration: (a) proportion of special education children to normally developing children, and (b) type of service delivery (regular versus specialized curriculum, teacher training, teacher:child ratios, learning theory). Turnbull (1982) suggests a slightly different approach which identifies integration according to temporal, social, or instructional variables.

In designing this project, a preschool age group was selected. Peck and Semmel (1982) suggested that social acceptance of handicapped children in integrated environments is more likely to occur at the early childhood level and may become increasingly more difficult as the children get older. It was then determined that the preschoolers would be

mainstreamed for the majority of their educational day, increasing the opportunities for appropriate social interactions to develop. As stated by Hendrickson, Strain, Tremblay, and Shores (1982) an individual's social behavior affects his overall behavioral development and adjustment in later life. Finally, a typical community day care center was chosen as a mainstream site to maintain higher ratios of nonhandicapped to handicapped children and regular education curricula and interventions. With the purpose identified by Vincent, Salisbury, Walter, Brown, Gruenewald, and Powers (1986) of preparing children to function successfully in the next least restrictive educational environment, as much access as possible to natural and appropriate classroom stimuli and consequences was desired.

Attitudes Towards Integration

The attitudes and expectations of participating administrators, teachers, and parents will have a direct impact on the effects of integration. As surveyed by Blacher and Turnbull (1982), Prillaman (1984), and Ringlaben and Price (1981), concerns generally center around anticipating detrimental effects on both handicapped and normally developing children.

Research has demonstrated that while nonhandicapped children do not typically choose children with handicaps as playmates (e.g., Faught, Balleweg, Crow, & van den Pol, 1983; Guralnick, 1980; Ispa, 1981; Strain, 1984) (a) their

attitudes towards those handicapped playmates become more positive with contact (Voeltz, 1980), (b) their positive attitudes can be maintained as long as the interactions with their handicapped peers continue over time and are mutually reinforcing (Condon, York, Heal, & Fortschneider, 1986; Voeltz, 1982), and (c) their developmental progress is not adversely affected (Hanline, 1985; Odom, Deklyen, & Jenkins, 1984).

This mainstream project is implemented by a segregated facility serving individuals with special needs. The attitudes and expectations of its administrators, teachers, and families were first addressed through individual and group meetings for discussion of the goals and rationale behind the project design, selection of children, implementation strategies, and program evaluation. A plan was then developed for conducting similar meetings with parents, administrators, and teachers of normally developing children. The plan included methods of addressing and responding to this group's typical concerns about their children's modeling inappropriate behaviors, developmental progress, and negative attitude development. Approaching potential day care centers for participation in the project was facilitated with this plan.

When making decisions at the policy level, service providers must consider policies that are a result of legal mandates requiring compliance to specified rules and

regulations. In addition, some of the social policies (i.e., types and goals of integrated experiences and attitudes and expectations towards integration) underlying the legal guidelines have been addressed here. The decisions made based on these policies lead into the selection of appropriate settings where integration will occur.

## Setting

Within the context of integration, the setting is the location where children with handicaps have the opportunity to interact with naturally occurring stimuli and consequences, including people, resources, and services. Because these children have been typically treated in segregated settings by specialized staff, service providers may be required to look beyond their own agencies to find all the elements of a "natural" setting. Public schools do not usually serve preschool-aged nonhandicapped children. Consequently the public sector may not have mainstream settings available for the younger handicapped child who is often eligible for services by at least 3 years of age. However, day care and nursery school services are rapidly expanding, increasing the available sites within the private sector of the community (Levine & McColoum, 1983). Working in cooperation with private agencies to provide mainstream services introduces the additional consideration for the service provider of finding the right match between service goals and the philosophy and structure of a setting.

Program Philosophy

The first component of the setting to address is its philosophy of serving young children as reflected in its curriculum, instructional methods, and environmental design. If the philosophies of cooperating agencies cannot be integrated or adapted to each other, administrative and staff conflicts can arise.

As discussed by Odom, Jenkins, Speltz, & DeKlyen (1982), the area of curriculum could potentially require change or resolution of differences particularly when mainstreaming children with severe handicaps. Curricula for these children usually focus on skills that will help an individual function as independently as possible in later life. Traditional academic learning may not be included in special education curricula or may be inappropriate to the needs of handicapped children. On the other hand, Bailey, Clifford, and Harms (1982) noted that preschool curricula can foster other creative and social development that may be neglected by special educators.

In the project described here, the children with behavior disorders are mainstreamed into the day care classrooms in the mornings and then go to a separate classroom in the day care center for individual and small group instruction in the afternoons. During the morning integration time, all of the children choose their activities. The special and regular education teachers work

with small groups of children. The day care teachers plan the lessons for the week from their developmental curricula and the special education teachers follow the sequence, adapting the curricula as needed to foster success for the children with handicaps and integrating those children's individual program objectives into the activities. In the afternoon, the special education staff work individually and in small groups with the project children, teaching both developmental and functional skills that can be applied in the day care and other community and home environments. Because the project includes this split schedule of mainstreamed and segregated instructional time, the children with special needs benefit from both kinds of curricula.

The instructional methods and behavioral management used by the teachers must match or be adaptable to the ways in which the children with handicaps learn. For example, Stipek and Sanborn (1985) collected observational data on teacher-initiated interactions with handicapped and nonhandicapped preschool children, child-initiated interactions, and teacher responses to children. The authors found variations in teacher behavior across the categories of children and suggested that the types of teacher interactions can encourage or discourage children's learning and independence. Other considerations that may affect children's learning include (a) the type of activity, teacher-directed and paced or child-initiated, (b) the various sensory channels used in

learning, and (c) the clarity of student behavior expectations and consequences.

Within the mainstream project, the day care staff select strategies according to the individual needs of the learners. With the recommendations and assistance from the special education staff, activities are assessed according to the needs of the children with handicaps and adaptations may be made for the whole group or the individual only. The day care staff also establish classroom rules and consequences for violation of those rules that are generally effective for all of the children. Again, when adaptations are necessary, they are clearly defined and made within the parameters of the typical classroom routine.

The environmental design of a classroom can foster learning, and as Hart (1982) emphasized, affect the teacher's ability to teach. Stainback and Stainback (1982) suggest that schedules, grouping, type and location of materials, and area size can be structured to encourage interactions between handicapped and nonhandicapped children. The day care center in which this project takes place is located within a residential neighborhood and serves approximately 75 children divided into 1 classroom for 3 year olds, 2 classrooms for 4 year olds and 1 kindergarten. Each classroom is divided into small play and instructional areas. The children rotate through the areas where various theme materials are placed or activities are conducted (e.g., story

time, cooking, art, housekeeping, block play, table toys, sand play, and water play). The playground space and equipment are designed to encourage different types of outdoor social play. The day care center employs numerous strategies that assist the children to successfully interact with the classroom environment. The strategies include clearly defining activity spaces, labeling materials to match locations, establishing daily routines, and conducting small group instruction.

Organizational Structure

The selection of any mainstream setting, whether it is private or public, will depend in part on that setting's leadership, client characteristics, and staff support (Stetson, 1984). In searching for this project site, several day care centers were visited to find an organization whose administration was supportive of serving children with handicaps in the community. The director and several of the board members of the chosen site had experience or training in services for the handicapped and were aware of the rationale of mainstreaming and typical concerns of parents and staff. Consequently, issues could be addressed internally and openly in the day care center.

Another characteristic of an organization is its clientele. The number of children, their ages, and developmental ranges may affect the variety of mainstream options within the chosen setting where age appropriate

groupings and activites are desired. Because there are four classrooms of children spanning 3 to 6 years of age, the day care center has several alternatives for appropriately placing the children with handicaps. The day care children have a heterogeneous mix of developmental skills and economic and ethnic backgrounds. While these characteristics have not been critical to the success of the project, they seem to have made the inclusion of another heterogeneous group easier.

Hamre-Nietupski and Nietupski (1981) discussed how the characteristics, responsibilities, and preparation of the setting's staff will influence their receptiveness to including children with handicaps in their classrooms. Three important elements identified were staff training, team teaching, and communication systems. The participating day care center has a full time staff of 12 teachers and aides, assisted by 7 foster grandparents, several part time aides, workstudy students, teachers in training, and volunteers. With a group of staff members who have had several years teaching experience and longevity with the day care center, and who extensively participate in university programs for training new teachers, the opportunities to increase professional development are numerous. Their instructional methods emphasize successful team teaching experiences. They plan for and teach children with a variety of behavioral and developmental needs. They have frequent gatherings for

planning, problem solving, and socializing. These characteristics have all facilitated the integration process.

Reciprocal Benefits

Because mainstreaming typically requires unusual or extended efforts from the setting participants, there should be some motivating components for them. Although the previously cited literature has contributed many suggestions for how to gain the support of those serving nonhandicapped individuals, there have been few direct references to what immediate benefits the regular educators will receive from the process.

The day care center has identified several factors that made participation in the mainstream project attractive to it. The center is supported by its children's tuition fees and the United Way Agency, with supplemental funds from the federal government and miscellaneous contributions. These funds are often unpredictable and insufficient given budget cuts and rising operational costs. Thus, the financial support from the grant funds for the guaranteed tuitions of the 5 project children is an important benefit. Other motivating factors included a decreased staff-child ratio with the placement of the special education staff in the day care classrooms, additional equipment and materials available between the participating agencies, and training opportunities for day care staff and parents.

As is evident in the preceding discussion, the

community setting where integration takes place has a variety of opportunities for a mainstream program, particularly when good matches can be found between program needs and the setting characteristics. It is now important to consider how the service provider can best set up systems or processes for delivering therapeutic programs given the characteristics of the chosen setting.

## Service Providers

At this level, service providers establish systems that enable an organization to meet the program goals. In the project described here, the service provider is a private center serving children with severe behavior disorders and autism referred by local education agencies. The center is responsible for planning, administering, implementing, and monitoring the project that includes 5 children enrolled in its programs. This section will focus on those decisions that are notable to the preschool project, including (a) the service delivery model, (b) staff training, (c) parent participation, and (d) program evaluation.

### Service Delivery Model

Once the service provider determines the appropriate goals and activities of a particular program, it then must consider how the services will be delivered within the framework of its unique characteristics. An initial concern focuses on the staff who will be involved - their organizational level, responsibilities in the program, and

interactions with each other. Responsibilities must be well defined and systems set up for accountability (e.g., Groden, Baron, Pentecost, and Stevenson, in press). When Biklen (1985) conducted a 4 year study of 25 mainstream programs, he identified appropriate staffing levels as a variable that increased program quality. Thus, staff:child ratios must be appropriate to the characteristics and needs of the children with handicaps within the mainstream environment. Resource personnel such as behavioral specialists, speech and language pathologists, physical and occupational therapists, and creative arts specialists can provide important program recommendations and also help to link regular and special services.

Because of the cognitive levels and behavioral characteristics of the children in this project and because of the day care staff's unfamiliarity with these children's needs, it was felt that the special education personnel needed to be present at all times in the mainstream classrooms. Enough children were selected so that the typical staff:child ratio of the specialized center was maintained (1:2) without having to hire additional personnel. One behaviorally trained, special education staff member is assigned to each of the three classrooms where the children with behavioral disorders are placed. This person is responsible for adapting curricula, attending to the children's behavioral needs, and assisting the day care staff

conduct and monitor activities. At the same time, the special education staff member provides information and models for the day care teachers so that more responsibility is gradually transferred from specialists to regular educators. In addition to direct service specialists, the children with special needs receive services from many other resource specialists as part of their usual programming. A half-time supervisor is on-line and accessible for monitoring the project's goals, staff training, and child programs.

The schedule or timing of service delivery activities can be structured to enhance the successful results of mainstreaming. This project used several strategies in making decisions about scheduling. Because it is an interagency cooperative program, finding the mainstream site preceded making final decisions about how integration could be accomplished. Once the children with the handicaps were placed in the day care center, time was allowed for observation of the children and development of relationships among the teachers before certain interventions requiring the day care teachers' participation were implemented. Another scheduling decision involved the daily activities of the children. The day care children spend their mornings participating in activities and early afternoons in quiet time. Consequently, the children with behavior disorders are mainstreamed 3 hours per day in the mornings and receive individual instruction 2-1/2 hours each afternoon 5 days per

week.

A third component of the service delivery model is the available resources. This project has investigated and used appropriate curriculum materials, a knowledgeable staff, and consultations from several professionals across the country who are active in integration efforts for children with severe handicaps. The literature is another major resource that was used in making program decisions.

Staff Development

As Stainback and Stainback (1984) point out, staff who participate in mainstream programs will need special training to implement the objectives of both the program and the children. The staff includes not only the special and regular teachers and aides, but also other resource and professional staff, interns, volunteers, and foster grandparents who interact with the children. Several training needs have been identified in the literature, including methods for teaching academic skills in natural settings (e.g., Hamre-Nietupski et al., 1982), dealing with behavior problems of both handicapped and nonhandicapped children (e.g., Campbell, Dobson, & Bost, 1985), sensitizing nonhandicapped children to the needs and abilities of their peers with handicaps (e.g., Baum & Wells, 1985), and instructing children in groups (Hoyson, Jamieson, & Strain, 1984; O'Connell, 1986). This project focuses on another area which directly impacts integration programs: the "social

skill" development of the special education staff. Because staff members are required to team teach and be the advocates for the children with handicaps, their ability to communicate and interact in a socially effective manner with other professionals, parents, and community members is critical.

Methods of implementing training activities for staff in integrated programs have also been suggested by professionals. These methods involve direct classroom observation by both regular and special educators in their reciprocal environments, informational and open discussion meetings (e.g., Hamre-Nietupski, Nietupski, Stainback & Stainback, 1984), inservice training before and throughout program implementation (e.g., Hamre-Nietupski & Nietupski, 1981), modeling by a behavioral specialist (e.g., Russo & Koegel, 1977), and detailed teaching instructions with feedback on child data (e.g., van deh Pol, Crow, Rider, & Offner, 1985). This project combines the above strategies in a model described by Baron and Stevenson (in press) of field based, on-line training which has the advantages of trainers' modeling, observing, and giving feedback within the context of naturally occurring events.

Parent Participation

Parents play a critical role as change agents for their children. In mainstreaming children with and without handicaps, service providers should be helping parents of both groups learn to work with their children. As suggested

by Blacher and Turnbull (1983) after surveying parent interactions in a mainstreamed preschool, positive parent relationships should be encouraged through frequent interactions. Parents of children participating in the project have been involved in a variety of activities, including individual home programming for the children with handicaps, parent training workshops, mothers' groups, day care center pot lucks, and topic-related meetings. Parents of the nonhandicapped children have been encouraged to interact with the project staff, parents, and children, allowing a forum for exchanging information and expressing concerns.

Program Evaluation

Service providers have the responsibility to evaluate their efforts in producing desired outcomes of program goals. Strain & Odom (1986) recommended using innovative procedures for program evaluation such as criterion-referenced assessments, child change analysis, single-subject designs, and social validation. A system of evaluation has been established for this project that assesses two aspects of services, product and process.

Product evaluation assesses end goals of the program through analysis of children's standardized and criterion-referenced assessments and observational data focused on behaviors functional to the setting. Process evaluaion focuses on systems critical to attaining program goals such

as staff development, parent participation, program planning and participant satisfaction. Table 1 summarizes several methods used to evaluate the project.

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Insert Table 1 about here

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The tasks for the service provider at this level of the decision model have included considerations about how objectives will be implemented (i.e., service delivery model) and what systems will support the service delivery (i.e., staff development, parent participation, and program evaluation). The final level examines decisions about the participating children. As the primary beneficiaries from the experiences, their development should be considered individually in relationship to program goals, environmental characteristics, and appropriate services.

## The Child

Program activities planned for the children with and without handicaps deserve careful and systematic attention. Four components pertinent to planning mainstream programs will be discussed: (a) child selection and placement, (b) instructional targets, (c) intervention strategies, and (d) evaluation of child progress.

### Child Selection and Placement

This area gives rise to debate about what characteristics make the handicapped child appropriate for

mainstreaming. Are there pre-requisite skills or behavioral patterns that are necessary to "make it" in the mainstream classroom? Strain & Shores (1983) proposed that a child will never be judged ready when he or she is expected to exhibit those requisite skills with non-responsive handicapped peers. In an investigation conducted in 1979, Strain, Kerr, and Ragland also found that children's initial levels of performance did not predict their responsiveness to interventions in mainstream settings. However, Guralnick (1976) has suggested several factors to consider in child selection that include chronological age, level of observational skills, type of behavior, degree of structure needed for modeling, grouping, and characteristics of nonhandicapped models.

The authors believe that there cannot be a clearly defined description of the "ready" child without considering any particular child in relationship to the following: (a) setting characteristics (e.g., classroom design and instructional model), (b) the attitudes of the nonhandicapped peers, teachers, and parents, (c) the teachers' expertise, (d) the interventions needed to teach and maintain behaviors, and (e) the developmental and behavioral characteristics of the nonhandicapped participants. When forming cooperative interagency programs such as this project, one of the primary considerations is the guidelines determined by the staff and parents from the mainstream setting. Willingness of these

participants to accept what is perceived as the more "difficult" child will be facilitated by the service provider's assigning an adequate support system around the child.

The handicapped children enrolled in the center exhibit severe behavioral and learning deficits. The 8 children who have participated in the project during the past 3 years were selected with consideration to the above factors. The classroom design and instructional model of the day care require the children to be somewhat independent in following routines. Because this was their first experience with handicapped children, the day care teachers and parents felt that the children's behavior could not be seriously disruptive to the classroom. Children were selected who generally responded to typical procedures for consequating behaviors and who could learn new skills through modeling and teacher guidance, reducing disruption to the classroom routines. As can be seen in Table 2, this selection process yielded children with a variety of cognitive, language, and behavioral characteristics.

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Insert Table 2 about here

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Once children are selected, many other factors will influence decisions about their placement. In describing a model prgram, Carlson, Reinshaw, and Andrews (1981)

identified many of their placement considerations as the degree of participation possible during mainstreaming, the feelings of the teachers, and the match between the needs of children with and without handicaps. Cooke, Apolloni and Cooke (1977) and Strain (1984) observed preschools and found that children tend to interact more with developmentally similar children. Consequently, the chronological and developmental levels of the handicapped children and their peers might also be considered. Variables used in this project included (a) physical sizes of the children, the group, and the classroom; (b) developmental levels - the more severely cognitively impaired children were placed with slightly younger peers, and (c) instructional styles of the day care teachers.

Instructional Targets

Selecting goals for child behavior, like many other decisions, must happen within a developmental context of age, sex, economic background, physical setting, and curriculum (Strain, Odom, & McConnell, 1984). Several categories of instructional targets emerged from the literature and are briefly described here.

The most prominent category is socialization. The priority given social skills is reasonable, particularly in a mainstream setting where children who are different from each other are expected to interact. Several studies investigated the specific social skills that seem to result in positive

and successful interactions. The skills most often identified were observed by Strain (1983b) as organizing play, sharing, assisting, showing affection, and cooperating. Reducing inappropriate social behavior is also important as concluded by Sainato, Zigmond, and Strain (1983) who conducted sociometric analyses and found children with negative behavior to have a lower social status with peers.

Communication skills are an important second target related to socialization. Few studies could be found identifying specific language skills that facilitate handicapped and nonhandicapped children's interactions. Guralnick and Paul-Brown (1980) observed that nonhandicapped children appropriately adjusted their language and exhibited more behavioral requests and informational statements when successfully encouraging handicapped children to play with them. This information suggests communication targets for the nonhandicapped children, and also functional categories for the children with handicaps. In their chapter on preventive mental health, Strayhorn and Strain (1986) proposed that the ability to use language well in a range of functions is a priority goal. The link between communication deficits and behavior problems also suggests individualizing language targets to serve the same functions as inappropriate behaviors.

Also associated with socialization is a third category of play. Federlein, Lessen-Firestone, & Elliott (1982) and

Peterson and Haralick (1977) found that handicapped children segregated from normally developing peers had the less mature types of onlooking and solitary play. Dunlop, Stoneman, & Cantrell (1980) also observed that handicapped children had more inappropriate object play. These findings suggest the importance of increasing the types of play a child engages in to include functional and symbolic use of toys in parallel and cooperative play.

A fourth category is academics. In reviewing the literature, Odom & Speltz (1983) noted that the question of whether service providers are meeting approprate academic targets is inconclusive. However, academics remain a crucial programming area in which specific skills must be identified as functional across various environments.

In the Vincent et al. (1980) description of curriculum development through identification of criteria in the next educational environment, the authors discussed the target of social control as critical to academic success. The skills of social control included turn taking, quiet sitting, listening to directions, attending, volunteering, and compliance.

A final target is generalization of learned behaviors. Because it cannot be assumed that generalization occurs spontaneously, even in a mainstream setting where peers assist in supporting behavior, Strain (1983a) suggested that targets must be arranged for systematic training of the

children. Writing generalization goals into children's individual program plans cues service providers to implement appropriate and timely programs.

In determining instructional targets for the project children, three types of assessments are conducted when they enter the project and periodically thereafter. These assessments include administration of standardized tests, a criterion-referenced tool specifically devised from observing the performance of the day care children at the mainstream site, and observation systems for recording children's behaviors in the mainstream environment. Once assessments are completed in all of the targeted areas, recommendations are translated into objectives that emphasize skills the children need to interact with peers and stimuli in the mainstream classroom and also for later life activities. Each area of objectives includes information regarding instructional arrangements, materials, scheduling, and methods of evaluation that will be used in the mainstream and separate classrooms.

Intervention Strategies

This section of child-related considerations organizes procedures found effective in helping children meet the instructional targets identified in the previous section. Because there are excellent papers describing many of these strategies and their benefits, the scope of this discussion will be limited to identifying the procedures and citing

relevant literature. The strategies have been organized into three categories: (a) teacher-mediated interventions, (b) peer-mediated procedures, and (c) environmental strategies.

Teacher-mediated interventions are probably the most commonly used procedures for facilitating children's growth in the mainstream classroom. This is not surprising since instruction in schools is typically teacher oriented and directed.

A behavioral procedure frequently used by teachers in integrated settings is the prompt and reinforcement pair. This method was investigated by Peck, Apolloni, Cooke, and Raver (1978) to teach new free play behaviors to young children and then to successfully maintain those behaviors. A concern with this method is its disruptive potential to social interactions. A suggestion offered by Odom and Strain (1984a) to decrease this effect was using brief types of consequences and waiting until the end of a behavior chain before reinforcing. It was also noted by Cooke et al. (1977) that prompting and reinforcing of both nonhandicapped and handicapped children was needed to achieve program effectiveness.

In a recent investigation by Odom & Strain (1986), a teacher antecedent intervention was compared to peer initiation training. Results showed that when the teacher prompted an autistic preschooler's initiation to a trained peer, that peer responded and extended the interaction longer

than when the peer initiated the interaction. This procedure allows the teacher to start the interaction but not interrupt it to prompt responses. In variation to this intervention, Goldstein and Wickstrom (1986) had teachers instruct nonhandicapped preschoolers in strategies to facilitate interactions with behaviorally disordered peers. They then successfully prompted the preschoolers' use of these strategies through pointing to posters depicting the strategies and reinforcing their use.

Another teacher-mediated intervention that has been successful in teaching functional language and other skills is incidental teaching. This procedure, as described by Halle (1982), McCormick and Noonan (1984), and McGee, Krantz, and McClannahan (1985), relies on the teacher acting on initiations of the child in response to naturally occurring stimuli.

The second category of interventions, peer-mediated procedures, has been recommended by researchers as effective and advantageous for several reasons. First, Wahler (1967) found that preschool children exert a powerful influence on one another's social behavior. Second, Strain et al. (1979) demonstrated that peer trainers could increase positive social behaviors in autistic children. Peer-mediated strategies also reduce the necessity for teacher interventions which can be intrusive (Strain et al., 1984).

Odom and Strain (1984b) described three types of peer-

mediated interventions: (a) proximity, (b) prompting and reinforcement, and (c) peer initiation. Proximity refers to placing handicapped and nonhandicapped children together to play with each other. This procedure was found by McHale (1983) and Strain, Shores, and Timm (1977) to increase the children's social interactions. Teaching nonhandicapped children to prompt and reinforce their handicapped playmates was also successful in increasing social behavior (Strain et al., 1979) and functional community skills (Blew, Schwartz, & Luce, 1985). Peer-initiation training involves teaching the nonhandicapped child to initiate interactions with a handicapped child. In the Strain et al. study in 1979, this procedure was found effective and comparable to the prompt and reinforcement procedure. Using the three procedures in combination may be the most effective way to achieve and sustain desired results.

The last category of interventions is <u>environmental strategies</u>. Learning can result from manipulating elements of the settings. While environmental variables alone may not produce particular behaviors (e.g., Carden-Smith & Fowler, 1983), they may be used in combination with other procedures to encourage learning and as such, need further study.

According to Rogers-Warren (1982), arranging physical features of the environment so that furniture placement provides cues, small learning areas are defined, adequate space is given, and materials are managed will assist

children develop independence.

An instructional arrangement which has been suggested by Horne (1982) to foster social interactions and vicarious learning is organizing handicapped and nonhandicapped children together in small groups. Schutz, Williams, Iverson, and Duncan (1984) further recommended that the small groups include more nonhandicapped children than handicapped peers.

Selection of materials is important, particularly toys, since they are usually the focus of interactions. Social toys such as blocks, balls, and puppets were found by Beckman and Kohl (1984) and Poresky and Hooper (1984) to encourage more social interactions than isolated toys such as books, art supplies and puzzles. However, Ross (1982) pointed out that these isolated toys and other manipulative materials allow a child to begin concept development (e.g., classification, seriation, conservation) and aesthetic awareness.

The kinds of activities that are planned can also promote desired outcomes, particularly involving social interactions. Odom and Strain (1984a) suggested that sociodramatic activities increase interactions more than functional play. Fredericks, Baldwin, Grove, Moore, Riggs, and Lyons (1978) found motor activities to be more reinforcing for interactions between children with and without handicaps. Activities that required cooperation among participants were found by Johnson & Johnson (1984) and

Stainback and Stainback (1981) to also promote higher achievement and social interactions.

Teaching behaviors as part of a routine or in a chain is important, particularly in social interactions that have been described by Brady, McEvoy, Gunter, Shores, and Fox (1984) as a chain of reciprocal initiations and responses. Other kinds of behaviors can also be chained within a skill area if one looks beyond the specific skill to the sequence of other behaviors of which that skill is a part and which maintain it. The sequence may include initiating the behavior in response to natural environmental cues, responding to cues that sustain or continue the behavior, and terminating the behavior. This sequence must be done in the appropriate place and at the correct time to consider a child independent in completing a task.

This mainstream preschool project makes decisions regarding which intervention to use according to the individual learning characteristics of the children. The children's specific objectives are integrated into the daily activities of the mainstream classroom and may also be practiced in one to one or small group sessions in the separate classroom. Several strategies are used to teach new skills and to decrease inappropriate behaviors. Shaping and prompting desired behaviors and reinforcing both children with and without handicaps are used to increase social interaction, play with toys, and attention to group

activities. Peer-mediated interventions assist in developing social interaction sequences. Environmental variables (e.g., type and placement of materials, classroom design, number of children in the group, teacher roles, and order of activities in the daily schedule) are also arranged to encourage learning. Isolated skills are imbedded in a behavior sequence or routine of which the skills are a part. Intervention procedures must always be considered in relationship to their appropriateness in a particular environment and be sensitive to the cooperative nature of mainstreaming.

Evaluation of Child Progress

It is important to closely monitor the progress of children in any instructional program to guide the service provider in making appropriate decisions about instructional targets and interventions. Simeonsson, Olley, and Rosenthal (in press) reviewed early intervention literature for children with autism and only found 3 programs that empirically evaluated the comprehensiveness of their interventions. Most other studies investigated the effects of a particular therapeutic or educational procedure on a narrow range of behaviors. The data presented here, though not resulting from an experimental design, provide information for evaluating a comprehensive approach to mainstreaming.

In this project, progress is continuously tracked in

each child's program using, (a) frequency data, (b) time sampling systems, (c) language samples, (d) ratings, (e) skill sequence checklists, (f) written program analyses, and (g) video recordings. These data systems are used by the special education staff in the mainstream and separate classrooms. The following section identifies the primary areas that are monitored and presents preliminary data from the first 2 years of the project. Though the data have not been tested for reliability, the staff recording the data have remained consistent across the 2 years. Data are included on the 4 children who were enrolled for most of these 2 years.

Social interaction with peers - verbal and motor initiations and responses. Staff recorded the daily frequency of appropriate and inappropriate interactions between peers. Figure 2 delineates the mean number of interactions according to responses and initiations of the project children. As can be seen, social interactions remain a difficult area for children with behavior disorders and autism, often showing variability and little change over time. These data suggest the need for more intensive interventions to foster the interactions.

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Insert Figure 2 about here

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Attending in group activities - on-task behavior.

appropriate vocalizations and motor movements. A whole interval time sampling system is used during a 15-20 minute large group activity, once per week. Ten second intervals are scored as appropriate or inappropriate in the three areas of task, verbalizations, and motor behaviors. Figure 3 depicts the four children's mean percent of time spent on-task during each month in the project. Attention to the group increased for each child; however, variability in performance still occurs, often because of variability in type of activity.

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Insert Figure 3 about here

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Play - random, exploratory, functional, and symbolic levels. Again, a 10 second whole interval time sampling system is used once per week to record the child's level of play and duration of play with particular objects or activities. Figure 4 shows each child's mean percent of time per month spent in functional and symbolic play. Tom and Bob increased the amount of time they played appropriately in both levels of play. Andy maintained a stable level of functional manipulation of toys. John decreased time spent in functional play but increased his participation in symbolic, pretend activities with peers.

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Insert Figure 4 about here

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Language - content, form, and use. Standardized and criterion referenced measures are administered periodically to evaluate the children's expressive, receptive, and social communication skills. In addition, language samples are recorded 2-3 times per year for analysis of the range of functions in the child's communications. Table 3 shows the change in the project children's language form as demonstrated through their mean length of utterance and Brown's stages of morphological syntactic development. Language form is an important measure of communication ability. Increase in sophistication of morphological syntactic structure means an increase in the potential to encode and express language content more accurately and efficiently.

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Insert Table 3 about here

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Individual program targets - rate of behavior change and skill acquisition. Each child's program plan defines criteria and methods of evaluation for behavioral and skill objectives. At the completion of implementing the child's annual plan, the number of objectives met are computed. Figure 5 depicts the mean percent of objectives met by the group of four project children. In additon, data for all the clients with behavior disorders in the center were computed for the 1984-85 program year as comparison to the project.

The project children have met over 80% of their individual objectives throughout their participation in the mainstream classroom which is at least 10% greater than those met in the center-wide program during 1984-85.

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Insert Figure 5 about here

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Ongoing data analysis provides important information that guides the development of programs. It is particularly critical when proponents of mainstreaming must demonstrate its effects to justify continuing programs.

Summary and Discussion

A process has been discussed that has been used as a guide in making decisions about designing and implementing a preschool mainstream program. The decisions are organized along the four levels of (a) policy, (b) setting, (c) service provider, and (d) child, with decisions made in each level affecting subsequent decision levels.

The project described here has several unique or notable features that may help other service providers develop mainstream programs. The first feature is its cooperative relationship between the public and private sectors of education. With the existing resources available in private community services, special educators and clinicians have more programming options, particularly when there are benefits to both participants. Funding the preschool

mainstream program has also been more creative in identifying options. Service providers should look beyond specific financial costs to other types of "support payments" such as staff training and shared access to materials and services. Finally, the project is part of a service delivery model that is dynamic and data based. These characteristics allows service providers to continuously evaluate the needs of the child and his or her family, the setting, and the community, and to change programs to meet changing needs.

The children with handicaps who are participating in the project have all learned and developed socially and developmentally as measured through on-going data analysis from their individual program plans. Because these children represent a range of cognitive and behavioral characteristics, their individual progress in a mainstream environment differs. These differences will continue to be evaluated in relationship to particular intervention strategies and environmental variables. The information from this kind of investigation can help us, the service providers, make good program decisions for mainstreaming preschool children. Peck and Cooke (1983) most appropriately concluded that our task "is not to prove but to improve the quality of integrated programs" (p. 17).

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Table 1

Program Evaluation of Kindergration Products and Processes

| Product evaluation | |
|---|---|
| Target | Method of Measurement |
| 1. Child progress in developmental, educational, and communication targets | (a) annual administration of standardized assessments and criterion-referenced tool<br>(b) on-going analysis of individual objectives met |
| 2. Child progress in social skill development and behavioral targets | (a) on-going analysis of type and rate of change for individuals and group measured by frequency, time samples, and interval data |
| 3. Teacher and parent satisfaction | (a) annual administration and analysis of questionnaires completed by special education and day care staff and parents |

| Process evaluation | |
|---|---|
| Target | Method of Measurement |
| 1. Parent involvement | (a) summary of parent attendance at meetings<br>(b) summary of number of parent contacts per year and analysis of home program objectives |
| 2. Staff training | (a) annual summary of written critiques of on-line observations to determine frequency done by child, staff, & program area |
| 3. Individualized program planning (IPP) process | (a) quarterly review of checklists of products from IPP process<br>(b) annual analysis of percentage of goals met for the group |

Table 2

Description of Children with Handicaps at Entry into Project

| Child | CA | MA | IQ[a] | Communication Skills | Behavior | Frequency |
|---|---|---|---|---|---|---|
| Tom | 4-11 | 3-0 | 40 | Speaks in 1-2 word phrases, uses language primarily to request | Non-compliance<br>Staring at lights<br>Self-stimulatory sounds | 4-5 times/day<br>30 incidents/day<br>continuous |
| Andy | 5-11 | 2-8 | 36 | Speech unintelligible; uses 1-3 word sign combinations; uses language to request reinforcers | Handbiting<br>Self-stimulatory sounds and motor movements<br>Aggression to teachers | 1-2 times/week<br>10-80 episodes/d<br>5-10 times/week |
| Sean | 7-2 | 3-3 | Below 50 | Mean length of utterance=3.44; uses language for variety of functions; engages in conversational rituals | Running away<br>Non-compliance<br>Repetitive verbalizations | 1 time/day<br>2 times/day<br>16 times/day |
| Bob | 3-11 | 3-8 | 90 | Speaks in short sentences; monotone quality; uses language for a range of functions | Tantrums<br>Non-compliance<br>Visual self-stimulation | 2-3 incidents/da<br>8 times/day<br>12 episodes/day |
| John | 4-4 | 2-3 | 40 | Speaks in 1-4 word phrases; poor articulation; uses language for a range of communicative functions | Tantrums<br>Non-compliance | 1-2 incidents/da<br>8 times/day |
| Bruce | 3-7 | 2-0 | -- | Speaks in one word phrases; uses language to request items; immediate echolalia | Crying<br>Non-compliance | 2½ hours/day<br>20 times/day |

Table 2 (cont'd)

Description of Children with Handicaps at Entry into Project

| Child | CA | MA | IQ[a] | Communication Skills | Behavior | Frequency |
|---|---|---|---|---|---|---|
| Brett | 5-2 | 3-9 | -- | Mean length of utterance=3.72; uses language for variety of functions, difficulties in language formulation. | Tantrums | 5 times/day |
| | | | | | Classroom disruptions | 59 incidents/day |
| | | | | | Non-compliance | 13 times/day |
| Craig | 3-8 | 2-9 | -- | Speaks in 1-5 word utterances; expresses a range of functions; multiple articulation errors | Verbal & Physical Refusals | 112 times/day |
| | | | | | Tantrums | 4 times/day |
| | | | | | Aggression | 8 times/day |

[a]Scores reported from Stanford-Binet Intelligence Scale, form LM, 1972 Norms (Chicago: Riverside Publishing Co., 1960)

Table 3

Progress in Language Development

| Child | Mean Length of Utterance (MLU) in Morphemes[a] At Entry into Project | Mean Length of Utterance (MLU) in Morphemes[a] At End of 2nd Year | Brown's Corresponding Stage of Development At Entry into Project | Brown's Corresponding Stage of Development At End of 2nd Year | Comments |
|---|---|---|---|---|---|
| Tom | 1.00 | 2.12 | prior to Stage I | Stage II | Utterances are mostly rote verbal routines that are regulatory in nature, needs prompting to use longer phrases. |
| Andy | 1.89 | 1.72 | late Stage I | late Stage I | Moved from echolalic, rote verbal/ signed phrases to more generative, creative language in shorter utterances. |
| Bob | 1.51 | 7.42 | early Stage I | post Stage V | Moved from interactive use of echolalia into generative language production. |
| John | 1.04 | 3.6 | early Stage I | Stage IV | Developmental speech apraxia interferes with consistant production of syntactic structures. |

[a]Scores and stages obtained from Assessing language production in children by J. F. Miller, 1981, Baltimore: University Park Press and from Planning individualized speech and language intervention programs by N. W. Nelson, 1979, Tucson, AZ: Communication Skill Builders.

## Figure Captions

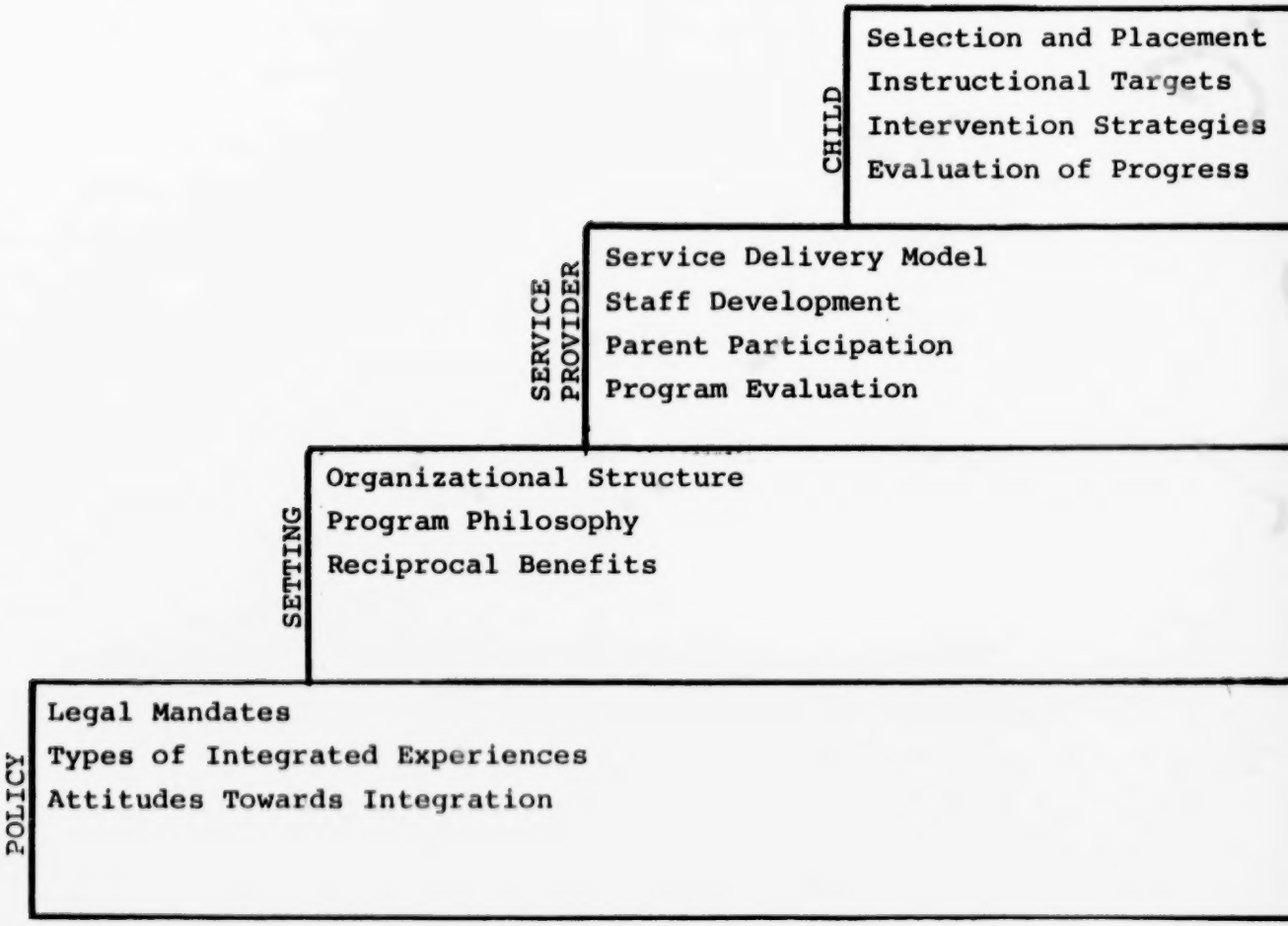
**Figure 1.** Levels of decisions made by service providers.

**Figure 2.** Social interactions with peers.

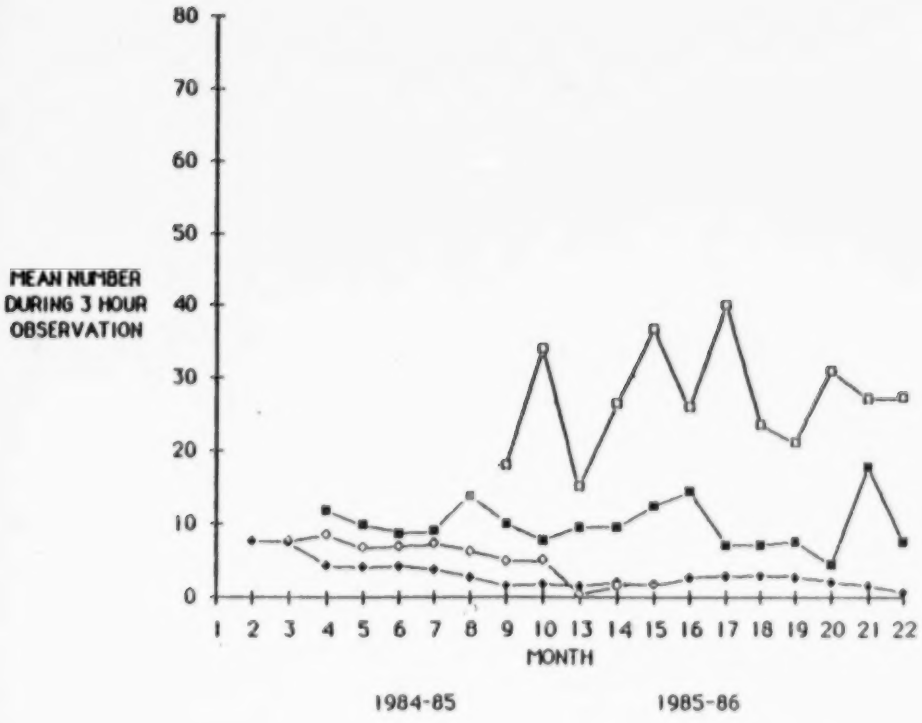
**Figure 3.** Attending to large group activity.

**Figure 4.** Type of play behavior.

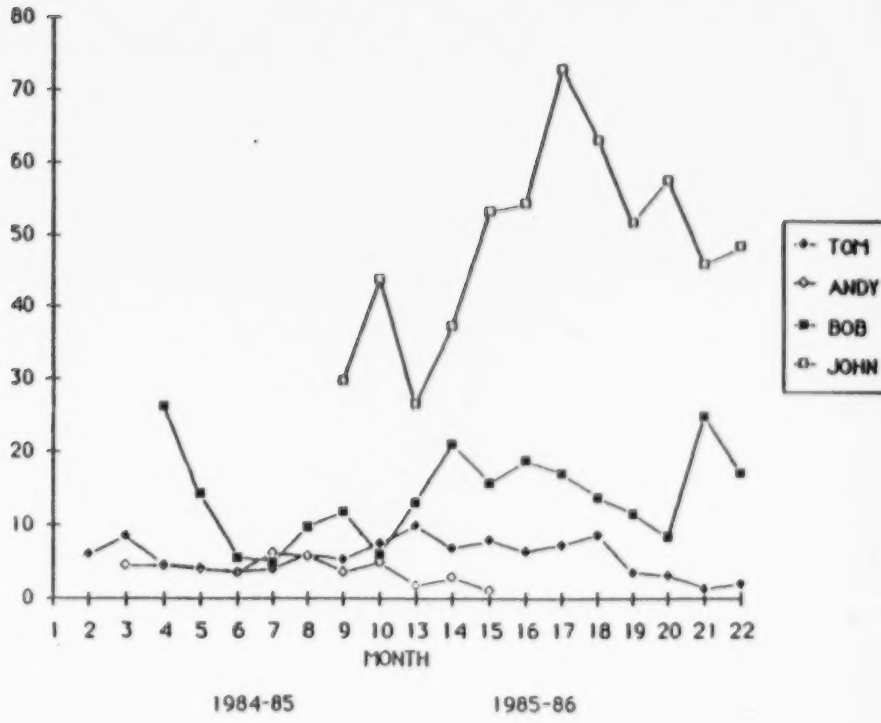
**Figure 5.** Educational and behavioral targets.


CHILD
Selection and Placement
Instructional Targets
Intervention Strategies
Evaluation of Progress
SERVICE PROVIDER
Service Delivery Model
Staff Development
Parent Participation
Program Evaluation
SETTING
Organizational Structure
Program Philosophy
Reciprocal Benefits
POLICY
Legal Mandates
Types of Integrated Experiences
Attitudes Towards Integration

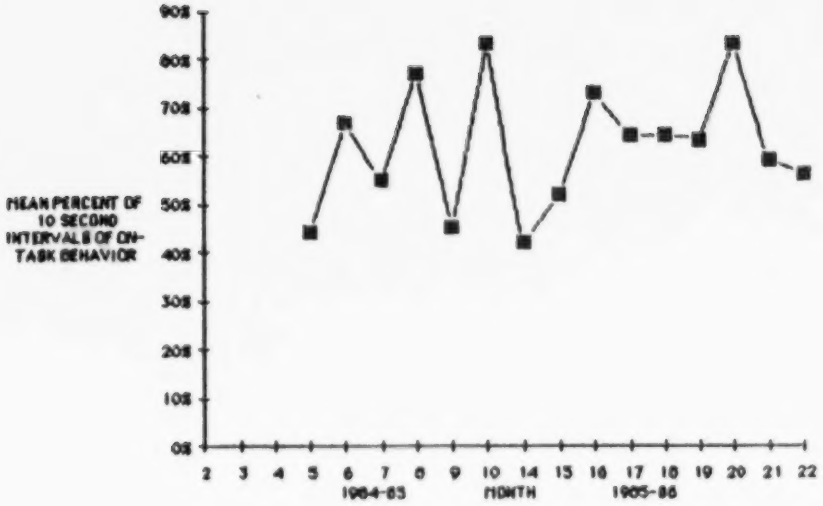
RESPONSES



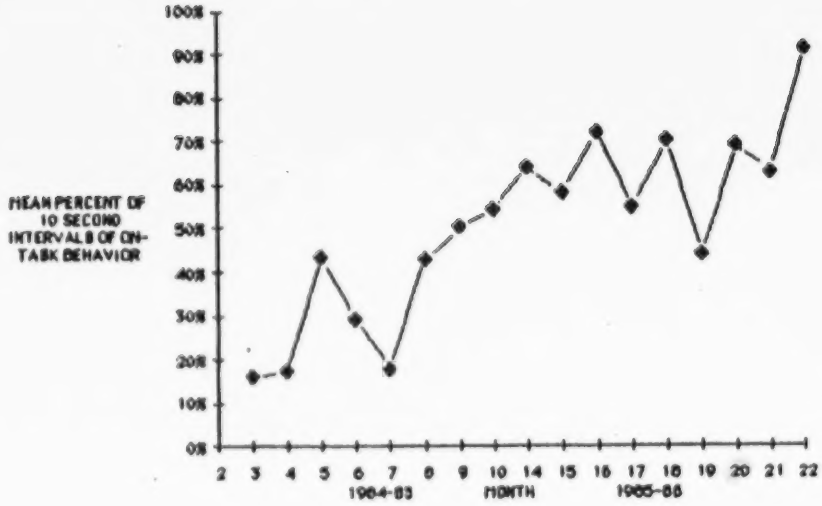

INITIATIONS



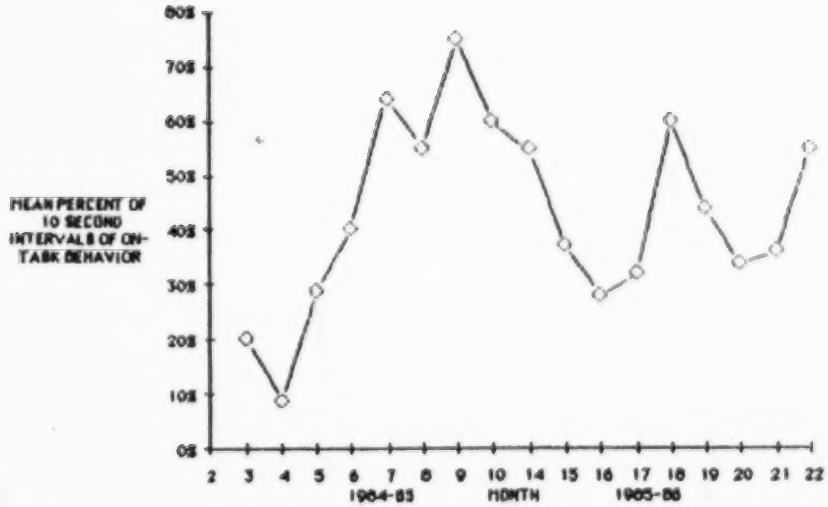
BOB



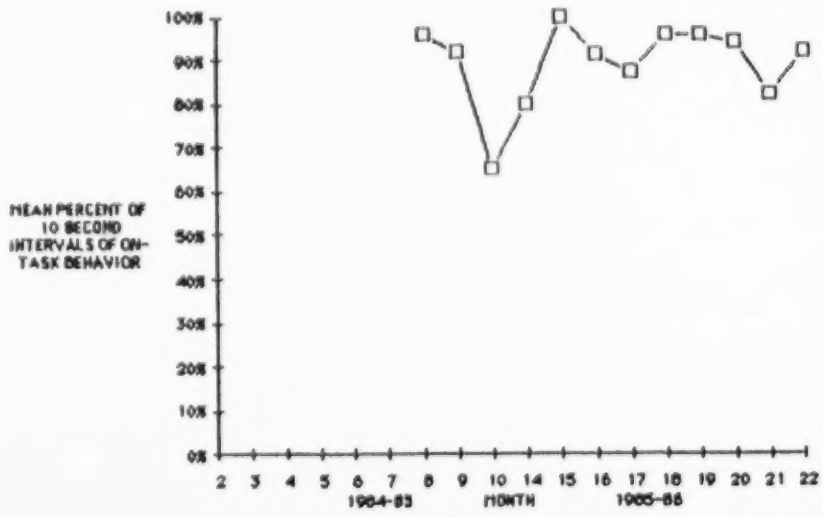

TOM

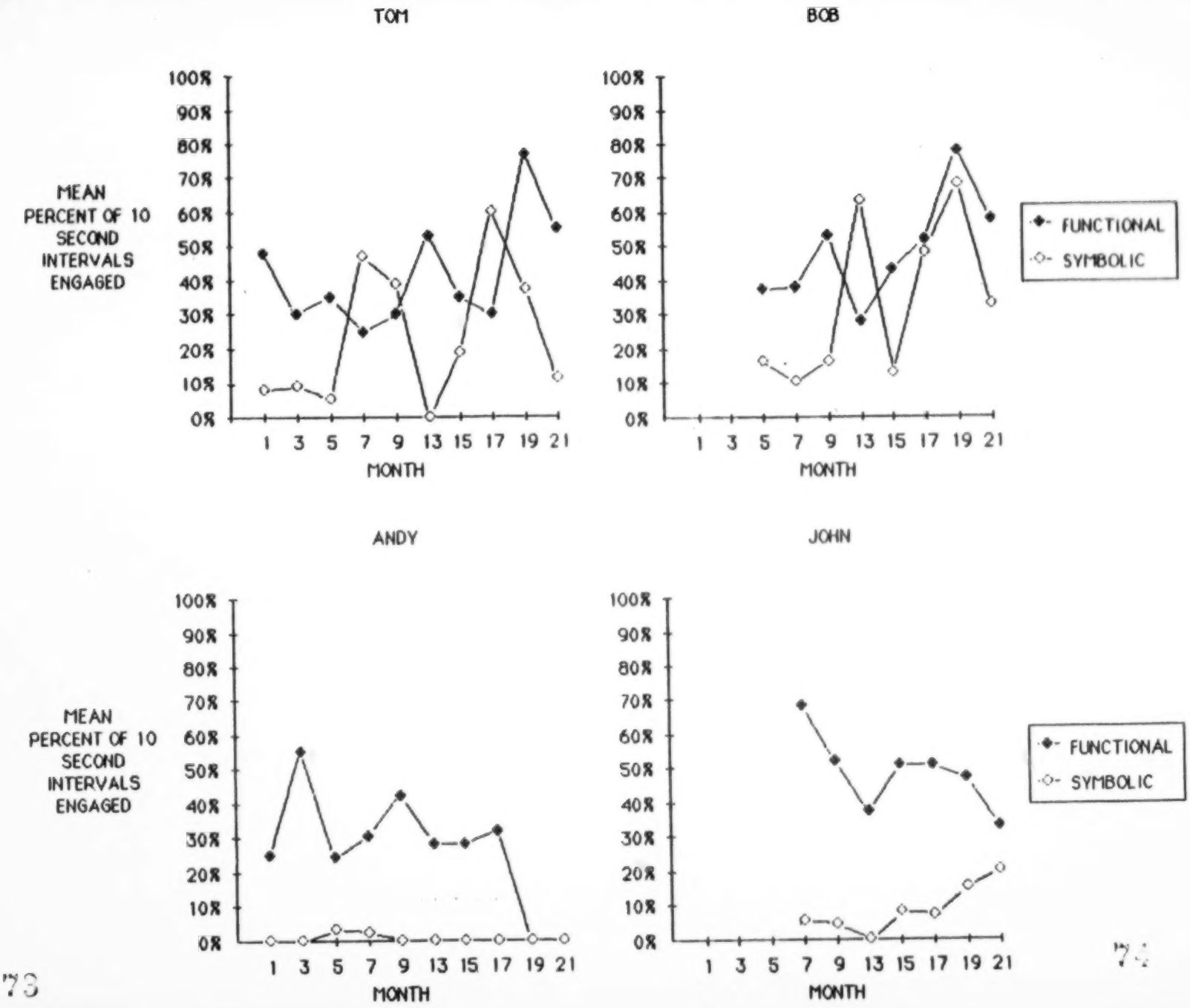


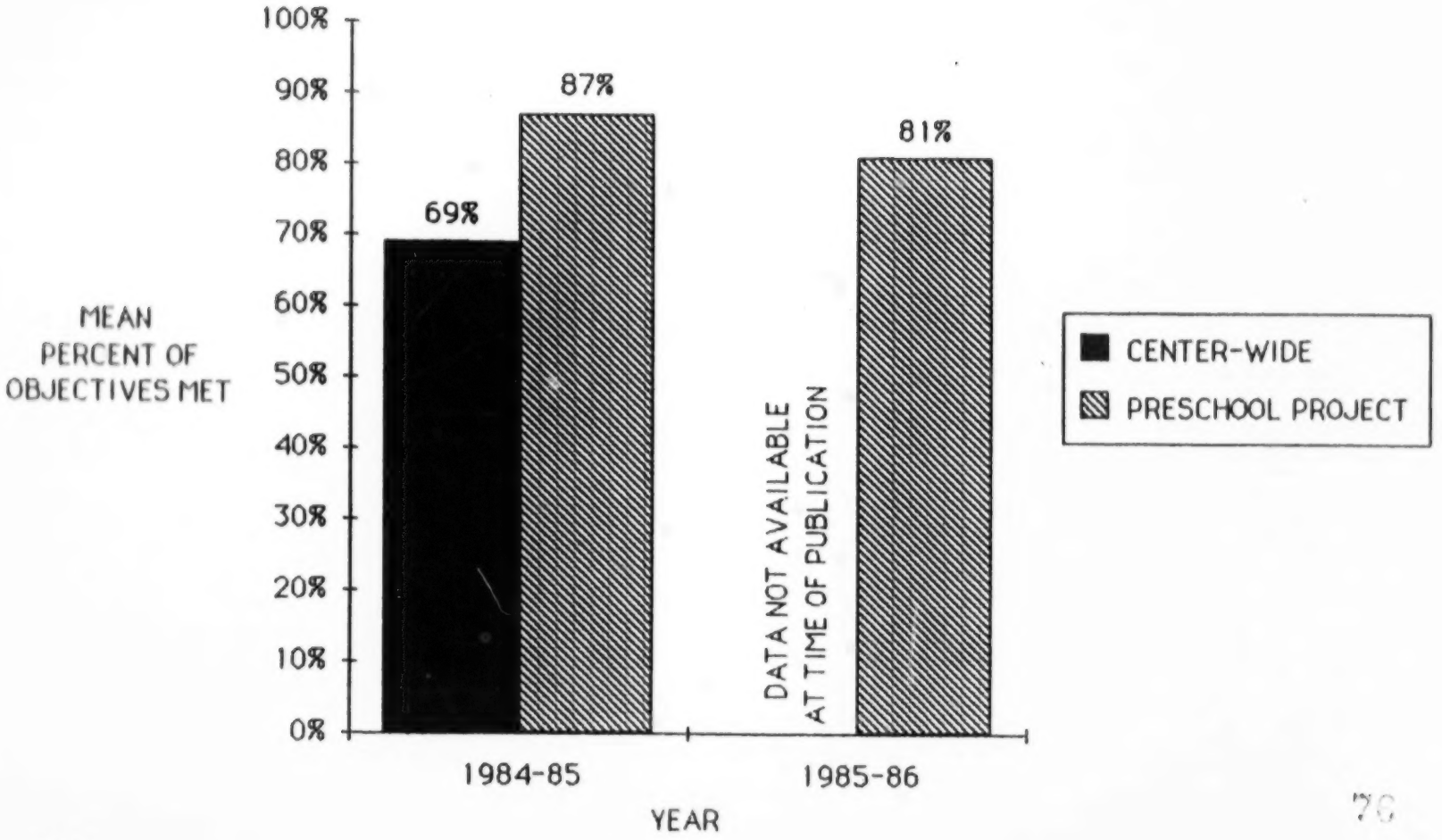

ANDY




JOHN




TOM
BOB
ANDY
JOHN
MEAN PERCENT OF 10 SECOND INTERVALS ENGAGED
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
1 3 5 7 9 13 15 17 19 21
MONTH
FUNCTIONAL
SYMBOLIC


100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
MEAN PERCENT OF OBJECTIVES MET
69%
87%
81%
DATA NOT AVAILABLE AT TIME OF PUBLICATION
1984-85
1985-86
YEAR
CENTER-WIDE
PRESCHOOL PROJECT